In the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

1 (Currently amended). A method for detecting *ex vivo* a target analyte/biomarker comprising:

(a) collecting a sample of bodily fluid in a container, wherein the container comprises the sample of bodily fluid and a headspace;

(b) mixing *ex vivo* to the bodily fluid in the container a nanostructure-based assembly that comprises a surrogate marker ~~with the sample of bodily fluid~~ where the surrogate marker is released from the nanostructure-based assembly in the presence of a target analyte/biomarker;

(c) applying sensor technology to the headspace or bodily fluid sample in the container, which contains the mixture of nanostructure-based assembly and bodily fluid sample in the container, wherein the sensor technology can detect a surrogate marker released from the nanostructure-based assembly in the container; and

(d) determining whether the sample contains the target analyte/biomarker by using the sensor technology to detect the presence of the surrogate marker, wherein detection of the surrogate marker ~~that~~ indicates the presence of the target analyte/biomarker in the sample of bodily fluid in the container.

2 (Currently amended). The method according to claim 1, wherein the nanostructure-based assembly comprises at least one nanotube comprising a hollow interior, a first end, a second end, surrogate marker located within the hollow interior, and an end-cap, wherein the first end is open and the second end is closed, the first end being blocked with the end-cap to prevent the release of the surrogate marker, wherein a means for detecting the target analyte/biomarker is attached to the end-cap; wherein the means for detecting the target analyte/biomarker can bind to the target analyte/biomarker; and wherein when the means for detecting the target analyte/biomarker ~~is in the presence of~~binds to the target analyte/biomarker, the end-cap is displaced from the first end to release the surrogate marker.

3 (Original). The method according to claim 2, wherein the means for detecting to the target analyte/biomarker is selected from the group consisting of aptamers, antibodies, proteins, and receptor ligands.

4 (Original). The method according to claim 3, wherein the aptamer is capable of binding to the target analyte/biomarker selected from the group consisting of αII-spectrin breakdown products and protease-specific spectrin breakdown products.

5 (Original). The method according to claim 1, wherein the target analyte/biomarker is a nucleic acid, a protein, an illicit drug, an explosive, a toxin, a pharmaceutical, a carcinogen, a poison, an allergen, or an infectious agent.

6 (Original). The method according to claim 1, wherein the target analyte/biomarker is selected from the group consisting of acetaldehyde, acetone, ammonia, CO, chloroform, dichlorobenzene, diethylamine, hydrogen, isoprene, methanethiol, methylethylketone, O-toluidine, pentane sulfides and sulfides, H_2S, MES, and Me_2S.

7 (Original). The method according to claim 1, wherein the bodily fluid sample is selected from the group consisting of: exhaled breath, blood, urine, bile, sweat, feces, semen, saliva, mucus, and cerebral spinal fluid.

8 (Original). The method according to claim 1, wherein the sensor technology is selected from the group consisting of surface-acoustic-wave sensors; fluid sensor technology; semiconductive gas sensors, mass spectrometers; IR, UV, visible and fluorescence spectrophotometers; conductive-polymer gas-sensors; aptamer biosensors; and amplifying fluorescent polymer sensors.

9 (Original). The method according to claim 1, wherein the sensor technology comprises:

(a) a surface-acoustic wave (SAW) sensor capable of detecting the presence of a surrogate marker in a sample of bodily fluid, wherein the SAW sensor responds to the surrogate marker by a shift in the resonant frequency;

(b) an oscillator circuit having the SAW sensor as an active feedback element;

(c) a frequency counter in communication with said oscillator circuit to measure oscillation frequency which corresponds to resonant frequency of the SAW sensor; and

(d) a processor for comparing the oscillation frequency with a previously measured oscillation frequency of the surrogate marker and determining presence and concentration of the surrogate marker therefrom.

10 (Original). The method according to claim 1, wherein the sensor technology comprises:

(a) a sensor having an array of polymers capable of detecting the presence of the surrogate marker in the sample of bodily fluid, wherein said sensor responds to the surrogate marker by changing the resistance in each polymer resulting in a pattern change in the sensor array;

(b) a processor for receiving the change in resistance, comparing the change in resistance with a previously measured change in resistance, and identifying the presence of the surrogate marker from the pattern change and the concentration of the surrogate marker from the amplitude.

11 (Original). The method according to claim 1, wherein the nanostructure-based assembly comprises at least one nanoparticle comprising a surrogate marker and a means for detecting a target analyte/biomarker, wherein the means for detecting the target analyte/biomarker is bound to the nanoparticle in such a way as to affect the release of the surrogate marker when in the presence of a target analyte/biomarker; wherein when the means

for detecting the target analyte/biomarker is in the presence of the target analyte/biomarker, the surrogate marker is released for detection by the sensor technology.

12-24 (Canceled).